

REMARKS

The Office Action issued February 11, 2008, has been carefully reviewed, and this amendment is responsive thereto. Further consideration of this application courteously is solicited. By this paper, independent claims 38 and 39 are amended to recite feature (i): the GaN single crystal (seed metal) having an n-type carrier concentration within a range of $1 \times 10^{17} \text{ cm}^{-3}$ to $1 \times 10^{19} \text{ cm}^{-3}$ and feature (ii): the GaN single crystal substrate having an n-type carrier concentration within a range of $1 \times 10^{16} \text{ cm}^{-3}$ to $1 \times 10^{20} \text{ cm}^{-3}$.

New independent claims 61-66 have been added, where each of claims 38 and 39 has been rewritten to incorporate the method of growing a GaN crystal according to independent claim 1 of US 6,693,021, claim 1 of US 7,357,837 and claim 8 of US 7,357,837 respectively. Care has been taken to avoid the introduction of any new matter.

Feature (i) regarding n-type carrier concentration range of the GaN single crystal is supported in the specification, at least, at [0170], [0254] and [0259]. Feature (ii) is supported at least at [0158].

Feature (i) has the advantage, for example, as indicated at [0170] of reduced crystal defects. Feature (ii) has the advantage, for example, of a controllable substrate, “without any intentional doping” as indicated at [0158].

The features added to claims 38 and 39 and written as new independent claims 61-66 are taken from issued US patents. By incorporating these features into claims 38 and 39, claims 61-66 are believed to be in condition for allowance.

New dependent claims 67-72 have been added to depend from claims 61-66 respectively in order to recite the features of claims 59 and 60 directed to use of a “vertical furnace” and HVPE.

In view of the foregoing amendments and remarks, it courteously is urged that all of the claims are allowable and that this application is in condition for allowance. Favorable action in this regard earnestly is solicited.

Respectfully submitted,

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